CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION

JULY 19, 2002

ITEM NO: **11**

SUBJECT: **Investigation of Methyl tertiary-Butyl Ether (MtBE) Sources Around the Concerto Wellfield, Cities of Anaheim/Yorba Linda, Orange County**

BACKGROUND

The Concerto wellfield is located within the cities of Anaheim/Yorba Linda in Orange County (see Attachment 1). The wellfield consists of supply wells identified as Ballad (inactive), Concerto No. 1 (inactive), and Concerto No. 2. These wells are owned and operated by Southern California Water Company (SCWC). These wells are impacted by or are threatened by volatile organic compounds (VOCs) and/or MtBE.

The Concerto wellfield investigation is a concerted effort by regulators, responsible parties and water purveyors to define the magnitude and source of the MtBE detected since 1995 in the Anaheim/Yorba Linda area.

Groundwater pumping in the Concerto wellfield began during the 1950's. In 1985, tetrachloroethene (PCE) and other VOCs were detected (up to 31.3 parts per billion (ppb)) in Ballad and Concerto No. 1 and these wells were shut down. In response to the VOC contamination, in July 1990, the Orange County Water District (OCWD) initiated an investigation to determine the source of the VOCs with the installation of three shallow groundwater monitoring wells (AM-1, AM-2, and AM-3) located downgradient or crossgradient from the impacted water production wells. No source of the VOCs was identified. In 1993, a replacement well, Concerto Well No. 2, was constructed.

In 1995, routine groundwater monitoring of the Concerto wells was modified to include analysis for MtBE, a fuel oxygenate found in gasoline. These tests indicated low levels of MtBE in all three of the Concerto wells. On December 3, 1998, a maximum concentration of 3.7 ppb of MtBE was detected in a sample collected from Concerto No. 2. (The primary and secondary Maximum Contaminant Levels (MCLs) for MtBE are 13 ppb and 5 ppb, respectively.) In the summer of 1999, modifications were made to Concerto Well No. 2 in an effort to reduce the impact of MtBE contamination. These modifications included changes to the pump intake so that groundwater would be extracted from the lower portion of the 500-foot deep well, rather than the shallower portions. Concerto Well No. 2 currently serves approximately 6,000 customers in the City of Yorba Linda. Recent analyses of water from Concerto Well No. 2 conducted by OCWD indicate MtBE concentrations ranging from 1.0 to 1.3 ppb.

EVALUATION OF POTENTIAL MtBE SOURCES

In response to the presence of MtBE in Concerto Well No. 2, Board staff held a stakeholder group meeting in early 1999. Stakeholders included representatives from the SCWC and their environmental consultant (Mission Environmental), the Department of Health Services (DHS), Orange County Health Care Agency (OCHCA), OCWD, Anaheim Public Utilities Department (Anaheim), and Board staff.

The stakeholder group conducted a preliminary survey and identified approximately thirteen (13) potential MtBE sources within a one-mile radius of the Concerto wellfield. This survey identified three retail gasoline service stations with past reported releases of petroleum products as potential sources of the MtBE contamination. These sites and the responsible parties (RPs) are:

1. Arco service station located at 5700 La Palma Avenue, Anaheim - BP West Coast Products (ARCO)

2. Texaco service station located at 15650 East La Palma Avenue, Anaheim - Equilon Enterprises LLC (doing business as Shell Oil Products US)

3. Former Unocal service station located at 19851 Esperanza Road, Yorba Linda - Tosco Corporation (a wholly-owned subsidiary of Phillips Petroleum Company)

These RPs had conducted preliminary site investigations and initiated remedial activities at the sites. In response to the MtBE contamination around the Concerto wellfield, on June 25, 1999, Board staff required the RPs to conduct additional investigations at their respective sites to define any existing on- and off-site contaminant plumes. The RPs were also directed to work jointly to investigate the area surrounding the Concerto wellfield, to submit monthly status reports, and to attend the stakeholder meetings. Several other businesses in the immediate area that had underground storage tanks were also required to install monitoring well(s) to determine if there was any indication of gasoline releases.

These investigations defined the petroleum hydrocarbon and the MtBE plumes at all three sites, with the exception of the cross-gradient boundary of the Texaco/Arco contaminant plume. The investigations in that area could not be completed due to the close proximity of these two sites and difficulties in obtaining an access agreement from the adjacent property owners (known as the I-Star property, former Canyon Corporate Center). All three sites are currently undergoing active soil and groundwater remediation or groundwater monitoring. No further investigations were required at the non-retail tank sites, as none of them had detected any evidence of releases.

On September 11, 2000, Board staff required the three RPs to conduct a comprehensive area-wide cooperative MtBE investigation. In response to these directives and to seek stakeholder input, numerous semi-monthly stakeholder meetings as well as separate technical meetings were held. These meetings provided a forum to review preliminary data, initiate the approval or revisions to various workplans, and to solicit comments and/or concerns from the stakeholders.

MtBE PLUME INVESTIGATION

As result of input from the stakeholders, a number of innovative techniques were used to investigate the plume. The MtBE plume investigation included the use of continuous multi-channel tubing (CMT) monitoring wells. Each CMT well has polyethylene tubing in seven distinct monitoring chambers with discrete openings at different depths. The use of this type of well allowed for a vertical profile of both water level and chemistry. An array of these multi-channel monitoring wells was installed in the city's right-of-way areas across the anticipated plume to determine the plume location and concentrations at different depths.

The CMT wells were installed, as approved by the stakeholder group, in three phases. In April 2001, three CMT wells were installed during the first phase. These wells were located north of the production wellfield (RMW-3), adjacent to the inactive Ballad well (RMW-2), and southeast of the Concerto well field (RMW-5). From August through September 2001, second and third phases of the investigation were completed. A total of eleven (11) wells were installed arrayed along two transects. Six wells (RMW-9, RMW-10, RMW-14, RMW-15, RMW-16, and RMW-17) were installed along the east-west transect (Orangethorpe Avenue) and five wells (RMW-6, RMW-7, RMW-8, RMW-20, and RMW-23) were installed along the north-south transect.

To further determine the lateral and vertical distribution of MtBE in the shallow-water bearing zone in the nearby residential neighborhood, which surrounds the Concerto wells, a direct-push technique, called Cone Penetrometer Testing (CPT), which allows for groundwater sampling without installing a monitoring well, was conducted. From October through December 2001, a total of 56 CPT locations (CPT-1 through

CPT-18, CPT-27 through CPT-31, CTP-39 through CPT-69, and CPT-72 through CPT-74) were advanced and sampled. To determine the accuracy of CPT sampling results, groundwater samples were collected from three CPT locations (CPT-72, CPT-73, and CPT-74) located adjacent to CMT wells (RMW-14, RMW-16, and RMW-17). In January 2002, additional "step-out" locations were sampled. Generally, these locations were approximately 50 feet away from the earlier CPT locations in all four directions, where feasible. (See Attachments 2 and 3.)

FINDINGS

The Concerto wellfield is located in the Santa Ana Forebay Groundwater Subbasin that includes an active groundwater recharge area. This investigation evaluated the shallow groundwater units since it is most vulnerable to MtBE and other VOC contamination.

Soils beneath the study area include alluvial Santa Ana River deposits (the shallower unit) and fine-grained marine sediments of the Fernando Formation (the deeper unit). The groundwater flow in the upper aquifer (upper 60 feet) appears to be predominantly horizontal. Based on measured groundwater elevations, horizontal hydraulic gradients, upgradient of the Concerto wellfield, are estimated to range from 0.006 to 0.01 feet/foot. Also, the Concerto wellfield has hydraulic influence in portions of the study area that may create some vertical migration as a result of pumping from the deeper zones.

To evaluate the shallow groundwater system, groundwater samples were generally collected from 30 to 40 feet (shallow groundwater was encountered at this depth) to a maximum depth of 200 feet below ground surface (bgs) (RMW-16). Based on the results, MtBE was detected in groundwater samples collected from 8 of the CMT wells and many of the CPT locations. According to these results, MtBE concentrations ranged from trace amounts to a maximum of 41 ppb. There were other samples that generated higher MtBE values, considerably above other detected values. Some of these values were not used in defining the plume, because they were not confirmed by subsequent verification sampling.

MtBE was detected throughout the study area and was generally detected in depths shallower than 100 feet bgs. The exceptions to this trend included CMT wells RMW-2, RMW-3, RMW-16, and RMW-17. The MtBE concentrations detected in these locations were detected in three zones (chambers in the CMT) deeper than 100 feet bgs.

Also, the investigation revealed the presence of MtBE in monitoring well RMW-3, upgradient of the Concerto well field. The MtBE detected in RMW-3 appears to be unrelated to the regional MtBE plume. This assessment is based on the difference in the lithology, geography, and chemistry of RMW-3 compared to other wells in the area.

CURRENT REMEDIAL ACTIVITIES

There were confirmed gasoline releases from the three RP sites (gasoline service stations) indicated above. The release from Arco dates back to 1992 and site investigations were completed between 1993 and 1996. The residual contamination at the site currently is at such low levels that it does not warrant active remediation. The releases from the Texaco facility were identified in 1996. The contaminated soil was excavated and removed from the site. Once again, the residual contamination at the site does not warrant active remediation. The groundwater at this site is monitored on a regular basis. Currently, the Unocal station is conducting both vapor extraction and groundwater pump-and-treat to remove the subsurface contamination.

The contaminant levels of MtBE detected in the aquifer upgradient of the wellfield are low and the monitoring wells are routinely monitored to determine concentration trends of MtBE in the aquifer. The data collected to date suggest that a pump and treat system or other remedial alternatives may not be technically and economically feasible. The MtBE plume seems to be confined to the shallow aquifer,

except at RMW-2, 3, 16, and 17. The 14 monitoring wells are located upgradient of the Concerto wellfield and downgradient of the service stations. The three arrays of transect wells will continue to be monitored on a regular basis to evaluate the MtBE plume's potential impact on the production well. Board staff believes that the MtBE plume will not further degrade the quality of water in the active production well (Concerto No. 2). However, as a precautionary measure, Board staff is proposing to require the parties to develop a contingency plan, should it become necessary to shut down Concerto No. 2 due to the MtBE plume.

SCWC CONCERNS

In a letter dated May 16, 2002 (Attachment 4), SCWC raised several concerns regarding the investigation of the sources of the MtBE in the Concerto wellfield. In its letter, SCWC stated that it believed that its assets were placed at risk by Board staff's arbitrary and capricious decisions. The SCWC made several allegations. The major allegations, followed by Board staff's responses, are listed below.

1. Allegation: Board staff is reluctant to require the RPs to complete the regional investigation required by the Board in August 2000 and the pace of these investigations are not consistent with the schedules indicated in the October 6, 2000 Executive Officer's Report to the Board.

   Response: Board staff and SCWC may not be in full agreement on what is needed for the regional MtBE investigation, but staff has never been reluctant to require the RPs to complete the regional investigation. It is true, however, that the investigations did not proceed according to the time schedules indicated in the documents referenced above. There were unavoidable delays caused by access problems to private and public properties. Other delays were caused by the unavailability of the specialized equipment needed for the CMT well installation. These delays were discussed at the stakeholder meetings. Other delays were due to the fact that Board staff attempted to develop consensus among the large stakeholder group regarding details of the investigation. The scale and complexity of the investigation necessitated a process by which the schedule and scope of field efforts were planned, updated and modified through regular meetings of the stakeholders. Therefore the actual duration of the investigative activities was longer than anticipated in earlier statements made by Board staff in the initial phase of this investigation.

2. Allegation: The SCWC believes that much of the data collected to date by the RPs is questionable because of lost equipment in wells and analytical irreproducibility.

   Response: It is true that some of the lead tubing was lost in the wells during the installation of the CMT chambers. However, data generated from these wells indicate that the lost tubing did not have any impact on the sample collection or the analytical results. As indicated above, there were some outliers in the data sets generated. However, verification sampling provided data consistent with the other data sets and the outliers were not used in defining the plume.

3. Allegation: There are known upgradient sources with elevated MtBE. They have not been comprehensively characterized, nor are their remediation efforts complete to an extent that would otherwise minimize risk to groundwater or SCWC's wells.

   Response: The stakeholders identified all potential sources of MtBE and all of those potential sources were investigated. All identified sources were characterized and remediated as appropriate. Board staff is not aware of any other sources of MtBE that have not been comprehensively characterized. Staff requested information on other MtBE sources from SCWC and has not received any details from SCWC.

4. Allegation: There is strong evidence linking the known sources to the Concerto wellfield. Board staff appears to be allowing the RPs to perform work to disprove their contributions, instead of directing efforts to solving the problem.

   Response: Problem identification is a necessary step before solutions can be developed. Board staff, with input from stakeholders, directed the RPs to characterize their sites and, where appropriate, to remediate soil and groundwater contamination. Both Texaco and Unocal have either ongoing remediation or have completed remedial activities at their sites. The residual contamination at the Arco site does not warrant active remediation at this time.

5. Allegation: SCWC has withdrawn its access agreement to Ballad well site due to concerns about the work and methods used by the RPs' consultants and it does not concur with the Board staff that there should be a priority to test these wells.

   Response: Board staff feels that continued monitoring of Ballad well is critical to evaluate the impact of the MtBE plume on the Concerto wellfield.

In general, SCWC felt that Board staff's actions in response to the MtBE in and around the Concerto wellfield were not appropriate and that the decisions of Board staff are arbitrary and capricious. Therefore, Board staff scheduled this matter for consideration by the Board to resolve these issues.

RECOMMENDATIONS

The investigation has confirmed MtBE to be present in trace to low concentrations in the aquifer upgradient of the Concerto wellfield. Also, MtBE was detected in the shallow portion of the aquifer, which flows primarily horizontally rather than vertically except in the vicinity of Concerto No. 2. Despite the extensive investigation and sampling, no specific source of the MtBE contamination detected in the Concerto wellfield area could be identified. Based on the above factors and the fact that active remediation and/or groundwater monitoring continues at the three retail service station sites, Board staff proposes to implement the following actions:

1. Continue groundwater monitoring of the CMT wells. A workplan for groundwater monitoring must be submitted and approved by staff with input from the stakeholders.

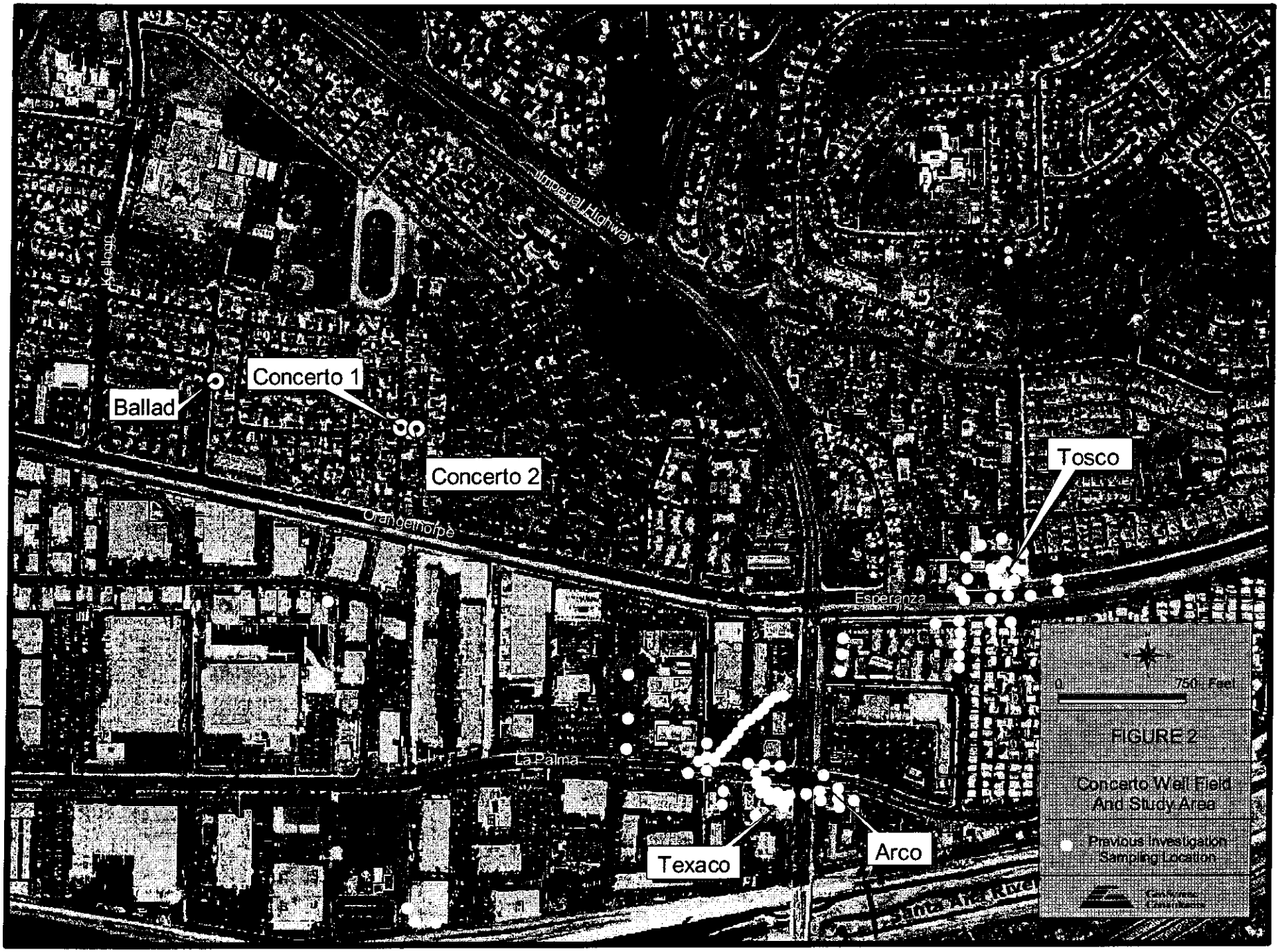
2. Install additional monitoring wells, including conventional and/or multi-depth wells.

3. Continue regularly scheduled stakeholder meetings.

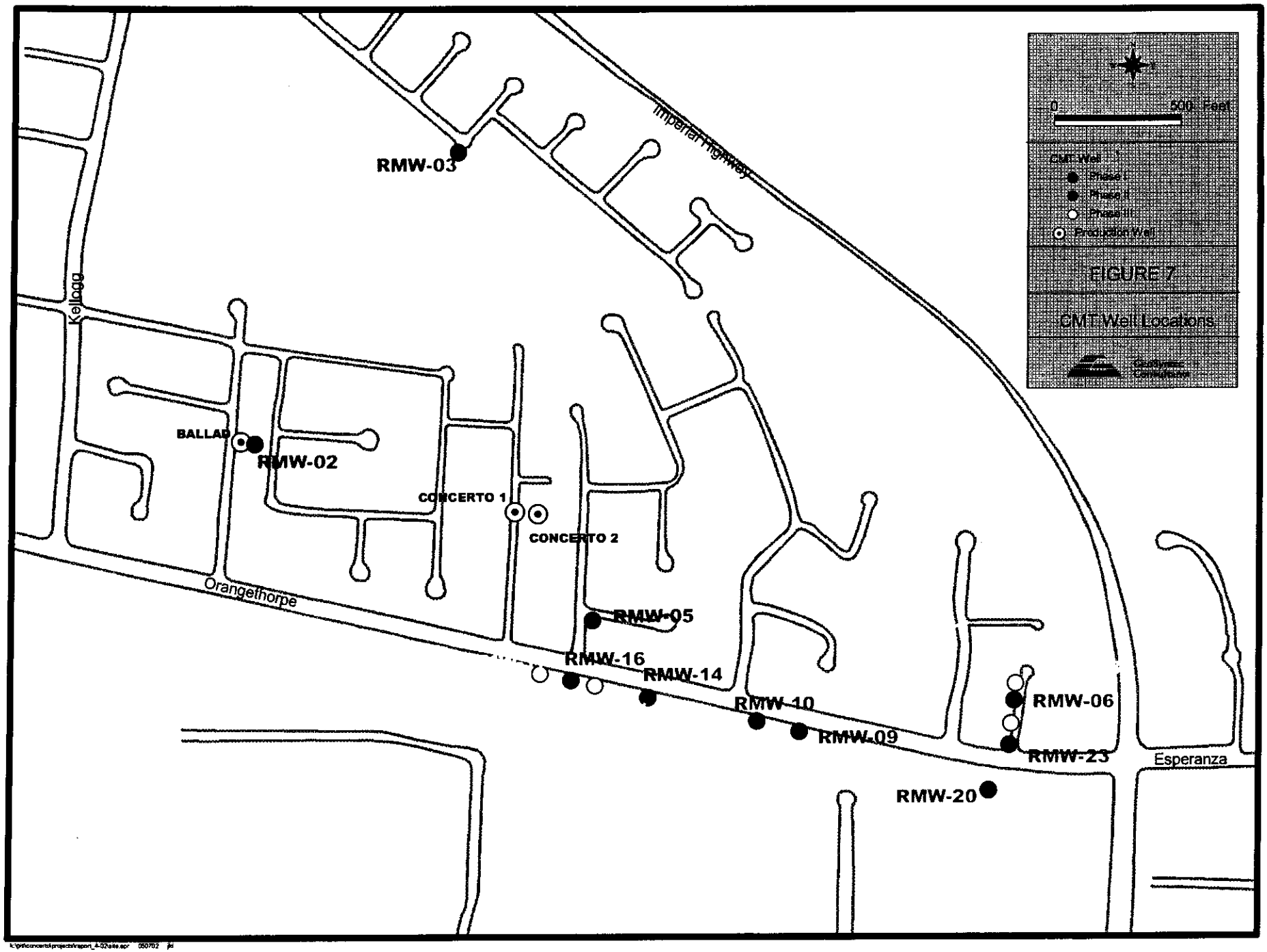
4. Continue current remedial and/or monitoring activities at the three service stations.

5. Pursue the development of a contingency plan between the SCWC and the responsible parties for the gas stations for implementation in the event of adverse impacts to Concerto No. 2 from the MtBE plume.

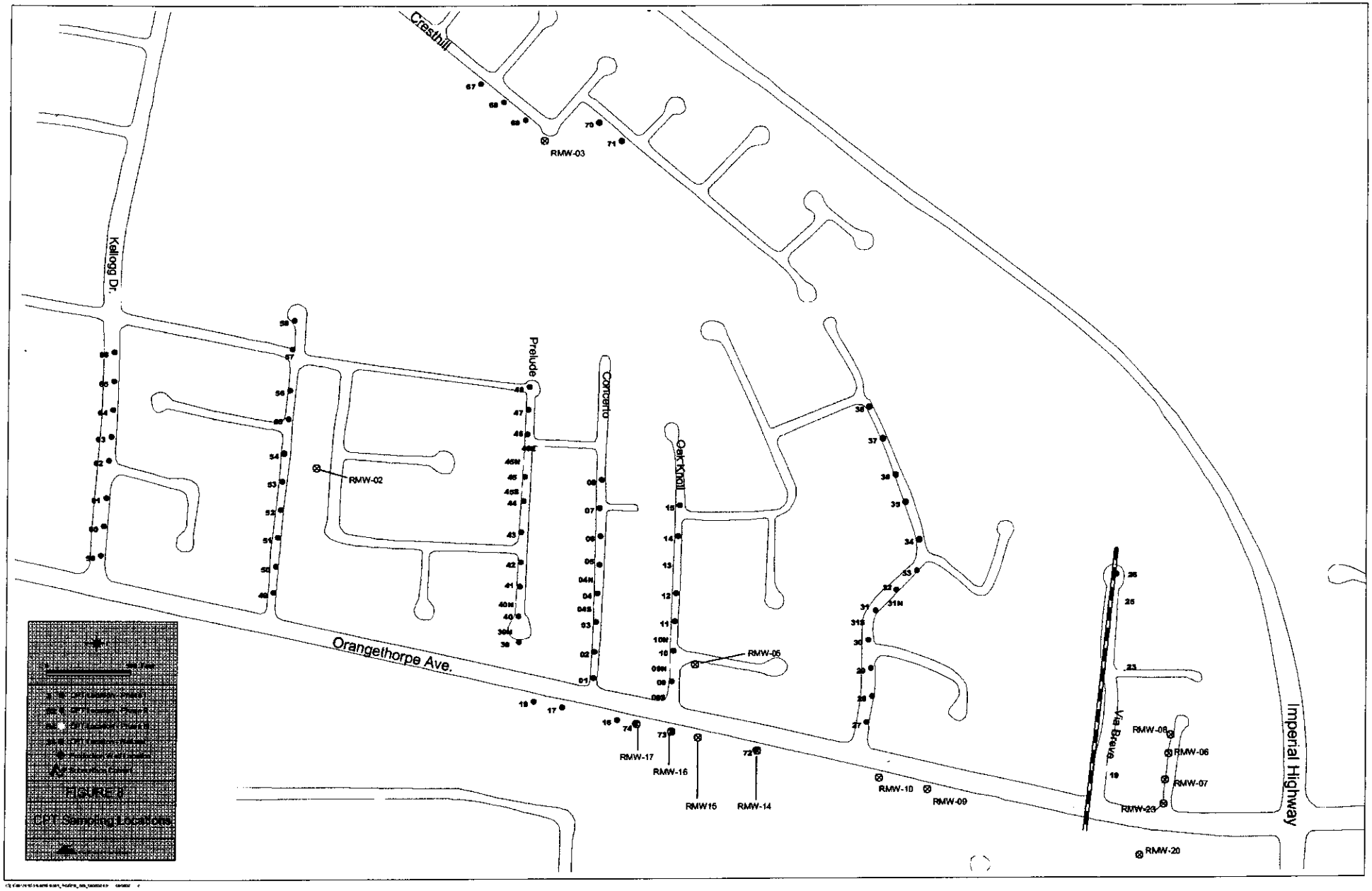
Board staff recommends that the Board affirm this course of action.



ITEM NO. 11
ATTACHMENT A



ITEM NO. 11
ATTACHMENT B



ITEM NO. 11
ATTACHMENT C

SOUTHERN CALIFORNIA WATER COMPANY
A SUBSIDIARY OF AMERICAN STATES WATER COMPANY
REGION III
2143 CONVENTION CENTER WAY, STE. 110 • ONTARIO, CALIFORNIA 91764 • (909) 937-0111 • FAX (909) 937-0222

KRW

KJR 5/20
GJT

May 16, 2002

Mr. Ken Williams
Santa Ana Regional Water
Quality Control Board
3737 Main Street, Suite 500
Riverside, CA 92501

Re: Concerto and Ballad Wells
Anaheim Forebay MTBE Investigation

Dear Mr. Williams:

While to date conflicting schedules have prevented it, Southern California Water Company ("SCWC") hopes that we will yet be able to find a mutually agreeable date and time for a discussion on the above-referenced topic. In order to be more efficient at the meeting, an outline of our comments and concerns with the performance of the staff of the Santa Ana Regional Water Quality Control Board ("Board Staff") and the PRPs in this matter might be beneficial.

SCWC is a public utility operating under the auspices of the California Public Utilities Commission and is required to adhere to water quality rules and regulations set forth in statute and as directed by the California Department of Public Health. SCWC proudly serves approximately 250,000 individual connections in the State of California, in many cases through groundwater wells. As such, we interface with your agency and various other Regional Water Quality Control Boards and the State Water Resources Control Board on a regular basis.

We are well versed in the manner in which other Regional Boards have approached the type of problem faced at our Concerto and Ballad wells and we understand the restraints, fiscal and otherwise, placed on all the Regional Boards. However, to our knowledge this is one of the few times we believe that Board Staff has placed this company's customers and this company's assets at risk by making arbitrary and capricious decisions. We are truly concerned about the Board Staff's recent decisions, apparent agreement and demonstrable partnership with the PRPs to allow them to destroy a valuable asset of the company, the right to withdraw water from the basin, without just mitigation or recompense.

This concern has led us to withdraw from any involvement with the "study" that has been and is apparently continuing in the subject area. While this "study" goes on, we have one well (Concerto #1) which has been removed from service, and due to the contamination by MTBE cannot reasonably be salvaged. We have another well that we feel is in jeopardy (Concerto #2). This latter well serves approximately 1,700 connections, and without it, the ability to serve this population is at risk. At the very least, loss of this well would involve a significant increase in cost to obtain replacement water, which cost would ultimately have to be borne by our customers, the people who the Board and the Board Staff is obligated to protect and serve. We would very much like to avoid that situation, and feel that, given the facts and circumstances, it should be avoided. Firm direction and control of the work performed by the PRPs in the above-mentioned "study" and a stronger hand by the Board Staff toward obtaining results that would assure the population continued access to safe, potable water at a reasonable cost are needed.

It is our belief that the position of the Board Staff should be, as a matter of first priority, to reduce the MTBE threat to the well field and thus protect the population we serve. However, for some reason there is an apparent reluctance by the Board Staff to require the PRPs to complete even the regional investigation as originally requested by the Board as far back as August 2000. On its face there seems to have been a general abandonment of the milestones originally set therein (see Attachment A: SARWQCB Executive Officer's Report, dated October 6, 2000, Item 25, Discussion point 3 "Yorba Linda/East Anaheim Area MTBE Contamination"). Further, the pace of the investigation and failure of the PRP's to provide key data, or for the Board Staff to require production of said data for SCWC's independent review, has not been adequately explained.

We believe that much of the data collected to date by the PRPs is questionable because of lost equipment in wells and analytical irreproducibility related to well construction, development, and reporting. Additionally, there are large data gaps that exist between the well field and PRP sites. These facts have been brought to the Board's attention on numerous occasions by SCWC's consultants, all seemingly to no avail.

SCWC has no confidence, based on data obtained to date, that MTBE concentrations will not increase up to or above either the secondary or primary MCL in Concerto #2. This hinders our ability to make necessary, potentially costly business decisions on management of the ground water to meet future demand. Because of this, SCWC is unable to utilize its full water rights (contamination has limited SCWC from extractions in high production shallow zones) all to the detriment of the company and its customers. Furthermore, while there are known upgradient sources with elevated MTBE, they still have not been comprehensively characterized, nor are their remediation efforts complete to an extent that would otherwise minimize risk to groundwater or SCWC's wells.

There is strong evidence linking these known sources to the well field (see Figure 1) and yet the Board Staff appears to be allowing the PRPs to perform work to disprove their contributions, instead of directing efforts to solving the problem. In the vicinity of the PRP sites, we observe 1) an absence of confining layers; 2) MTBE at depth short distances off-site (>90 fbgs off-site from Texaco); and 3) a high flow groundwater regime. Existing data shows MTBE between the well fields and known MTBE sources, and there is lateral discontinuity of the so-called "confining layer" and clear evidence of downward vertical flow across the "confining layer" under pumping conditions (RMW-5 pumping response during MWD connection testing as presented by GeoSyntec, and MTBE occurrences at depth in several CMT wells sampled to date, e.g., RMW-16, RMW-17, RMW-3). There is clear evidence of MTBE detections at Ballad (RMW -2 well) and at the Concerto site (Concerto #2 MTBE detections post-intake modification between ND<1.0 to 3.3 ug/l, n=32, 78% of samples with positive MTBE detections and a post-intake modification MTBE median of 1.4 ug/l compared to an overall historical median of 1.5 ug/l) following pump intake modification of Concerto #2 in June 1999. This is certainly sufficient to leave us to conclude that there is no reliable data yet collected to make SCWC believe MTBE will "disappear" or never exceed the secondary or primary MCL. Rather, to the contrary, it does point out that there is every likelihood that it will.

SCWC's impression is that the Board Staff interprets low to ND levels of MTBE in certain wells to equal insignificant MTBE threat to Concerto #2. The Board Staff has seemingly refused to take heed of the fact that the flow fields to Concerto #2 have changed since the June 1999 well modifications, and therefore there is no basis for comparison to pre-modification MTBE concentrations.

Evidence of major changes to the flow field subsequent to June 1999 Concerto #2 modifications can be seen in changes to drawdown in the aquifer from groundwater extractions in Concerto #2, and rapid changes to MTBE concentrations observed in the regional Orange County Water District "AM" wells. Figure 2 illustrates the change in drawdown in Concerto #2 where drawdown decreased from approximately 30 feet to 8 feet after well modifications. In Figure 3, the rapid change in MTBE concentrations in both AM-2 and AM-3 can be seen after well modification. MTBE concentrations decreased in AM-3 while MTBE concentrations have been climbing in AM-2.

In addition, the median and range of MTBE concentrations in Concerto #2 have not varied much from pre-intake well modification levels as outlined above. In fact, the most recent MTBE analysis for Concerto #2 was reported to contain 1.3 ug/l MTBE. Since Concerto #2 pumps groundwater at various rates and times throughout a day based on demand (post-intake modification), it is not known if this 1.3 ug/l MTBE is representative of a pumping rate of 800 gpm or up to 2,000 gpm. In any case, it does represent considerable MTBE mass currently being intercepted by Concerto #2 within the considerable thickness screened by Concerto #2, even following pump modifications.

As you know we have withdrawn our access agreement to our Ballad well site. There are many reasons for this, including those that are mentioned here. Additionally, there is our concern with the work and methods used by the PRPs' consultants. Further, SCWC does not concur with the Board Staff that there should be a priority to test these wells, although admittedly at some time this testing may ultimately be useful. As counsel has informed the PRPs, we are willing to work out some arrangement with the PRPs to perform certain work in relation to our well field, but under certain conditions. When we entered into the original agreement we did so in good faith believing that it would help to expedite a solution to the problem. Unfortunately, our faith has been severely shaken. We were left with no recourse but to terminate the agreement and attempt to reach a new, separate agreement for this work, if it is to be done.

The conditions for this access are generally as follows:

1. That the Board Staff order, or provide other incentive to, the PRPs to delineate the MBTE plumes both vertically and horizontally in an expeditious manner and not grant any continuances or abide by any delays without the express agreement of SCWC
2. That the Board Staff institute a more aggressive assessment of individual PRP sites and evaluate effectiveness of current remedial actions;
3. That after such order is issued, SCWC will assist in the testing relating to its Ballad and Concerto #1 wells as outlined by the Board Staff, but SCWC will assume no cost whatsoever in relation to this work which means SCWC will be completely compensated for any and all services it supplies in the course of executing the work plan;
4. That SCWC will perform any and all work on its property and that no PRP consultant be permitted on SCWC's property unless approved by SCWC personnel on site;
5. That all data will be provided to SCWC as generated;
6. That all disposal and/or treatment of water generated during testing will be the responsibility of the PRPs;
7. That the PRPs and their consultants meet certain insurance requirements;
8. That the consultants be made known to SCWC in advance of the work and that SCWC have the right to refuse access to said experts, a right which will not unreasonably be exercised;
9. That SCWC have the right to cease all testing as it sees fit to protect its property, including its wells.

As to SCWC's desire to see a prompt delineation of the plume, we suggest the following:

1. The area of investigation should be expanded; this should include particular attention to eliminating data gaps on the "I-Star" property between Orangethorpe and La Palma Avenues (see Figure 1);

2. Changes should be made to the spacing of CMT and CPT locations as they are presently too coarse;
3. That a "step-out" program be required for all wells and borings, based on known detections of oxygenates, with spacing to decrease in the near vicinity of production wells to account for narrowing of flow lines;
4. That the PRPs be required to analyze for the oxygenates MTBE, TBA, ETBE, TAME, DIPE (MDL <0.5 ug/l for MTBE, TAME, ETBE, and DIPE; MDL <5 ug/l for TBA) in all samples;
5. That all detections between the MDL and reporting limit must be "J-flagged" and reported;
6. That the CPT investigation be limited only as a tool to delineate shallow oxygenate assessment areas and that conventional wells or CMTs be used to characterize all areas, both shallow and deep;
7. The PRPs install one or more borings using conventional drilling methods accompanied by discrete-depth groundwater sampling at 5 feet vertical intervals in the saturated zone to depth, and located adjacent to a CMT well with MTBE detections, to confirm quality and repesentativeness of CMT wells;
8. Aquifer testing be conducted in conventionally completed wells as cited in Item #7 (above) in an area located between Concerto #2 and the source sites, including multiple tests with pumping from different key producing zones separated using packers.

SCWC has always maintained a good and close working relationship with all agencies with which it interfaces. We do not state the things we state herein lightly, and we continue to hope that the company and the Board and Board Staff will be able to work together to resolve the problem facing our mutual constituency.

Sincerely,

James B. Gallagher
Vice President
Customer Service – Region III

JBG:mp

cc: Gerard Thibeault, Executive Officer, SARWQCB
Joel Dickson, Vice President, SCWC
William Gedney, Water Quality and Environmental Manager, SCWC
Patrick Scanlon, District Manager, SCWC

3. **Yorba Linda/East Anaheim Area MtBE Contamination** – Regular monitoring of Orange County drinking water wells has revealed MtBE in three water supply wells in the Yorba Linda / East Anaheim area. These wells are owned and operated by Southern California Water Company. One of the wells, Concerto #2, is an active well, while the other two, Concerto #1 and Ballard, are inactive. The active well, Concerto #2, serves approximately 6000 customers in the Yorba Linda area and has shown MtBE concentrations of between 2 and 4 parts per billion over the past three years. The two inactive wells are screened across a relatively shallow interval and have shown MtBE concentrations ranging from 15 to 50 parts per billion. The State's secondary Maximum Contaminant Level for MtBE, based on taste and odor, is 5 ppb. The Southern California Water Company considers Concerto #2 to be the sole source of water for its Yorba Linda customers. Although potential emergency tie-ins are available at greatly increased cost and alternative sources are being pursued, no long-term contingency agreements are presently in place. Southern California Water Company has indicated that they plan on shutting off Concerto #2 if the MtBE concentrations rise above 5 ppb.

Currently, the source of the MtBE is unknown. There are three service stations situated upgradient of the Concerto wellfield. These three stations are operated by three separate oil companies (Texaco, ARCO, and Tosco (Unocal)) and are located between 2500 and 3000 feet away. All three stations have reported releases of gasoline. Other operators of underground storage tanks in this vicinity were required to install a groundwater monitoring well to confirm the condition of the groundwater beneath their tanks, but none of these smaller tank operators found any contamination at their sites.

On August 24, 2000, a meeting was held with representatives of the three oil companies, the Southern California Water Company, the Orange County Water District, the City of Anaheim Public Utilities, the Orange County Health Care Agency and Board staff. At this meeting, Board staff encouraged, under threat of a cleanup and abatement order, the three oil companies to work jointly to complete an area-wide hydrologic study of the area around the Concerto wellfield within the next twelve months. This area-wide hydrologic study is to determine the extent, distribution, and the source of the MtBE contamination. At a meeting held on September 13th, the oil companies responded positively, having hired an environmental consultant to spearhead this accelerated effort. Staff will be closely overseeing this investigation, and if the work does not proceed expeditiously, we will schedule a cleanup and abatement order for consideration by the Board.

4. **Caulerpa Taxifolia in Huntington Harbour** – An infestation of *Caulerpa taxifolia*, an invasive marine alga recently discovered in Agua Hedionda Lagoon, San Diego County, has been found in a pond located off Huntington Harbour. San Diego Regional Board staff partnered with Federal, State, and local agencies to form the Southern California Caulerpa Action Team (SCCAT) to undertake eradication of the *Caulerpa* infestation in Agua Hedionda Lagoon. Santa Ana Region Nonpoint Source staff and the Task Force are now involved in an emergency effort to promptly and

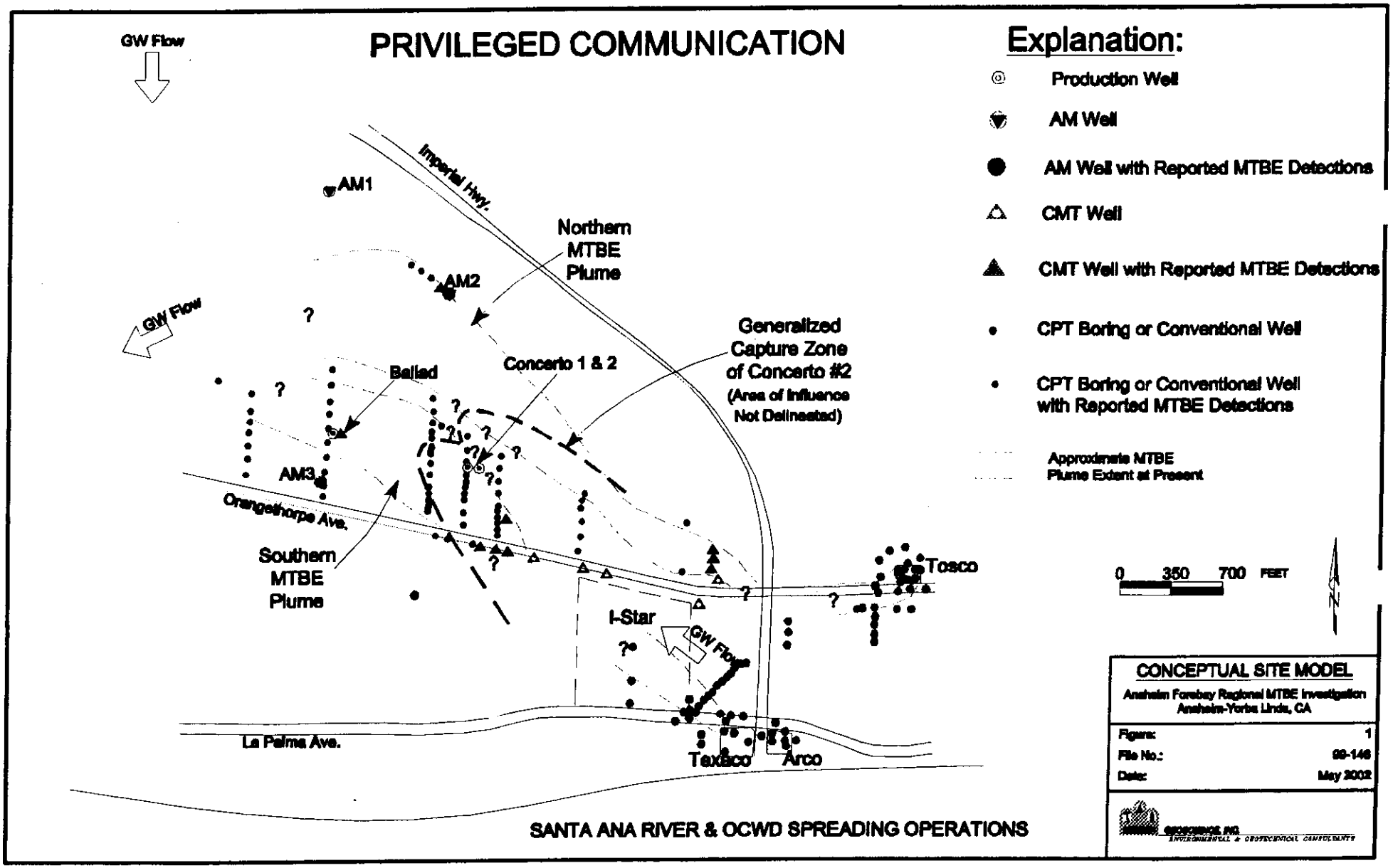

PRIVILEGED COMMUNICATION
GW Flow
Explanation:
Production Well
AM Well
AM Well with Reported MTBE Detections
CMT Well
CMT Well with Reported MTBE Detections
CPT Boring or Conventional Well
CPT Boring or Conventional Well with Reported MTBE Detections
Approximate MTBE Plume Extent at Present
Imperial Hwy.
AM1
AM2
AM3
Northern MTBE Plume
Southern MTBE Plume
Generalized Capture Zone of Concerto #2 (Area of Influence Not Delineated)
Ballad
Concerto 1 & 2
Orangethorpe Ave.
La Palma Ave.
I-Star
Tosco
Texaco
Arco
0 350 700 FEET
N
SANTA ANA RIVER & OCWD SPREADING OPERATIONS
CONCEPTUAL SITE MODEL
Anaheim Forebay Regional MTBE Investigation
Anaheim-Yorba Linda, CA
Figure: 1
File No.: 99-146
Date: May 2002

Figure 2: Concerto #2 Static and Pumping Water Level Elevations

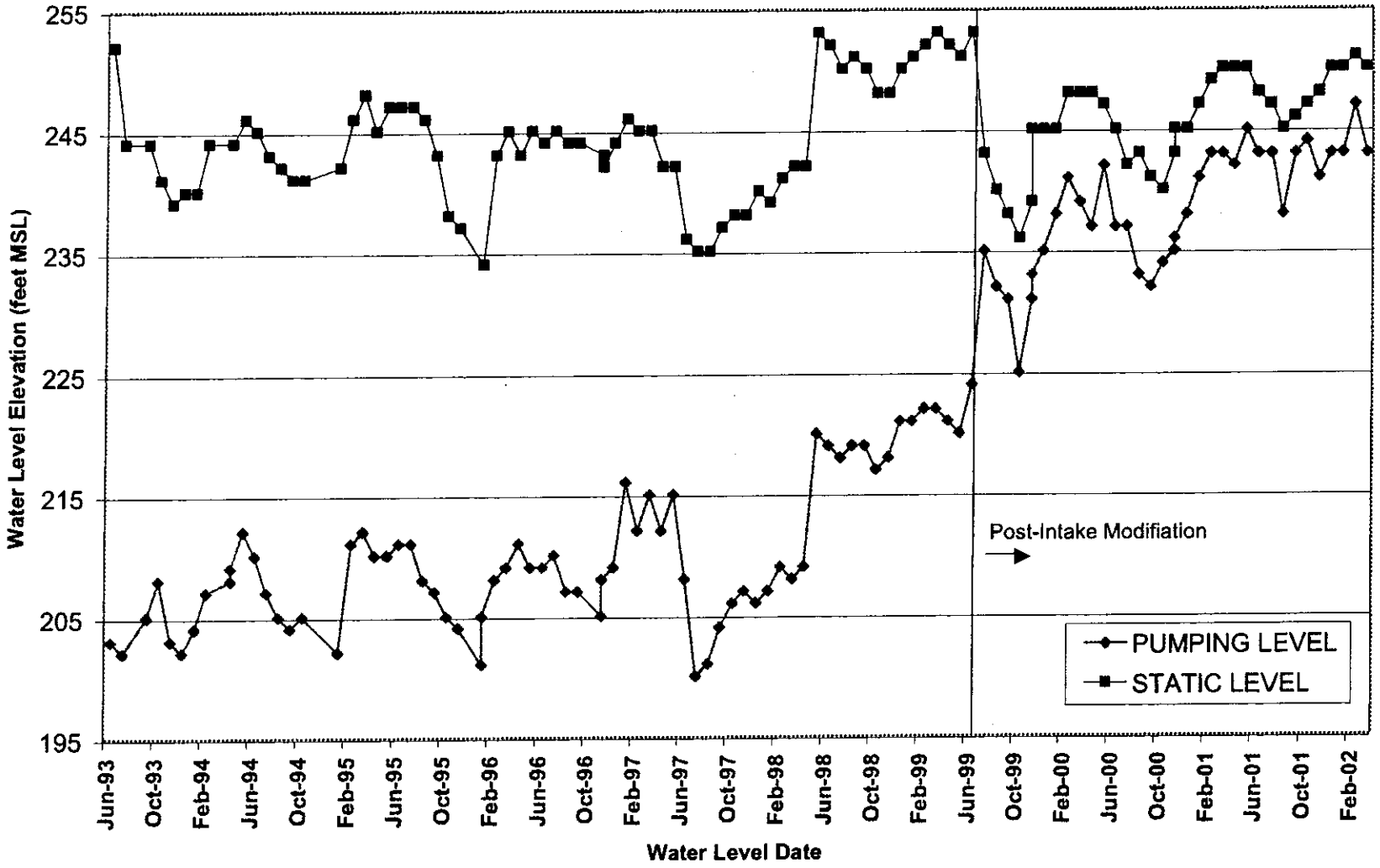


Figure 3: MTBE Levels in Concerto #2 and Regional OCWD Wells